



EDUCATIONAL OUTCOME AND EARNINGS DIFFERENTIALS IN INDIA: DYNAMICS OF CASTE

Suraj Sharma¹ | Prof. Jagdish Narayan²

¹ D.Phil. Scholar (Junior Research Fellow), Department of Economics, University of Allahabad, Allahabad.

² Dean, Faculty of Commerce and Professor, Department of Economics, University of Allahabad, Allahabad.

ABSTRACT

The study uses nationally representative unit level secondary data from Indian Human Development Survey (IHDS) collected first in 2004-05 and again in 2011-12. To analyze caste based discrimination in earnings and job opportunities and effect of increasing education and its return for different occupations, the study estimated first, linear regression analysis, followed by logit regression and finally decomposition techniques. The earning function clearly support the existing evidences of significant positive coefficients for education and marginal wage effects are increasing with the level of education for every social group, but return to education for scheduled caste was very low compared to forward caste. There are clear evidences of gender and location bias in earnings too. Our decomposition results show that endowment component is much larger than the discrimination component, because of existence of pre-market discrimination in India. Discrimination explains 10.9 per cent of the lower wages of scheduled caste individuals as compared to forwards in 2011. Over the two periods, the discrimination component has been decreased significantly for rural areas but for urban areas it has been dramatically changed to a negative unexplained component showing in urban areas no such evidences of discrimination in wage differentials is being found. Discrimination component was negative (-14.0 per cent and -18.4 per cent) for professional/administration and clerical/sales and services activities respectively and no such caste discrimination was found against scheduled castes (due to negative discrimination component). But discrimination component is highest at 59.8 per cent for agricultural activities; followed by production (19.9 per cent).

JEL: JEL Classification: I24, I25, J30, J31, O53

KEYWORDS: Caste, Decomposition, Differentials, Discrimination, Earnings.

1. INTRODUCTION

Caste system is a form of social stratification, mostly found in South Asian. Every society is stratified in one way or another but the possibility of absence of any stratification in any society is very rare and here in India, we find social stratification in the form of caste, based on the birth of the individual in a particular caste or sub-caste. Caste system was made to run the society properly, every caste was assigned to a particular work or occupation and that is still prevalent in some or the other part of the country, and by doing so, a particular economic status was also assigned to different caste groups. This leads to segregation or a segmented labor market. If individual from a particular social groups is restricted to a relatively few occupations, this segregation may result in 'monopsonistic exploitation'. Thus, this caste system is not only has the features of occupational dissimilarities but also has inequalities in opportunities like; education, health facilities, social status, economic status and most importantly earnings.

Dalits, who comprise around 17 per cent of India's total population, are victims of caste based discrimination from centuries. The caste system of India has kept them out of the social networks and assigned them demeaning, polluting and degrading jobs which are mostly manual in nature, hazardous and lethal. Actually, engagement of an individual to a certain occupation has been largely the sole criteria for deciding ones caste or sub-caste from thousands of years and still among the most distinctive factors of the caste system, especially in rural India. Affirmative action policy was introduced to alleviate these inequalities by the government, which provides reservation for scheduled caste (SC) and scheduled tribe (ST) groups in education, government jobs and centre/state legislatures to improve the standard of living of people from these groups. However, it is quite clear that growth had not percolated to the poor SCs/ STs to the desired extent, as millions of them are still living in deplorable conditions (Singh, 2009). Lower paying jobs and low wages are common in SC/ST groups compared to forward castes (FC).

Earlier reviews (Shah *et al.* 2006; Wankhede, 2009; Coffey *et al.* 2017) stated that SCs are backward due to their low level of education, low income, landlessness, poverty, etc. Intergenerational mobility in terms of education and employment has taken place over the years (Lynch, 1969; Jetley, 1969; Abraham and Subramanian, 1974; Mohan, 1984; Kumar *et al.* 2002; Hnatkovska *et al.* 2012; Vaid, 2012) which resulted in social, economic as well as political mobility. But most of the mobility in terms of occupation has been horizontal for SCs and vertical mobility for them is very limited (Ray and Majumder, 2010; Reddy and Swaminathan, 2015) which is mostly decided by different socio-economic forces like; education, income (class), region and caste itself (Nijhawan, 1971; Sunderaj, 1994; Eswaraiyah, 1994; Syal, 2012) and labour force participation may be contingent more on ascriptive factors, rather than purely achievement factors (Karade, 2009; Prasad, 2015).

The discrimination that takes place in social sphere has influenced the structure of wages and earnings of different social groups and SCs are most vulnerable to

wage differential that is not only because of pre labour market discrimination (Tilak, 1980; Banerjee and Knight, 1985; Borooah *et al.* 2007; Madheswaran and Attewell, 2007; Thorat and Attewell, 2007; Rajnish Kumar, *et al.*, 2009; Thorat and Sadana, 2009; Siddique, 2011; Sengupta and Das, 2014) but also due to caste discrimination resulting in occupational dissimilarity (Cheema and Naseer, 2013; Chandhoke, 2015; Tamim and Tariq, 2015; Bathran, 2016) and lower earnings compared to other castes (Spears, 2016). In spite of affirmative actions and social welfare programmes, the status of these castes has not improved to the desired level.

Very few studies can be found on caste discrimination in earnings (wage) and occupation (job) in Indian scenario. The pioneer work in this context is done by Banerjee and Knight (1985), with objective to examine the wage differentials between Non SCs and SCs workers in Indian labor market, found the "discrimination" component accounts for the significant part of raw wage differentials and that "wage discrimination" (discrimination in wages within the same occupation) superimposed the "job discrimination" (discrimination in access to certain occupations). Similar results were also found by Borooah *et al.* (2007) that job discrimination is only a part of observed wage differentials.

On the other hand studies like Madheswaran and Attewell (2007) using NSS data of 38th, 50th and 55th rounds to study the extent of inequality and wage gaps between higher castes (HCs) and the SC/STs in the formal sector in urban Indian labor market, found 15 per cent lower wages for SC/STs as compared to equally qualified others; is only because of labor market discrimination, however the endowment effect is very large, which is attributable to pre-market discriminatory practices with respect to education, health and nutrition. Authors found discrimination accounted for a large part of the gross earning differences between HCs and SC/STs, with "job discrimination" being more important than "wage discrimination". However, there is also evidence that the gap is declining over time.

Siddique (2011) used a correspondence study to determine the extent of caste based discrimination in the Indian private sector and found that on average low-caste applicants need to send 20 per cent more resumes than high-caste applicants to get the same callback. Differences in callback which favored high-caste applicants are particularly large when hiring is done by male or by Hindu recruiters. Similarly, the study of Thorat and Attewell (2007) examined the prevalence of discrimination in the job application process of private sector enterprises in India, based on a field experiment, sending applications for jobs as an upper caste Hindu applicant, as a dalit and as a Muslim and estimated the net effect of "job discrimination". By using the statistical models like logistic regression and hierarchical non-linear Bernoulli model (HLM) the study found job applicants with a dalit or Muslim name were on average significantly less likely to have a positive application outcome than the equivalent qualified persons with a high caste Hindu name and discriminatory processes operate even at the first stage of application process.

A study (Thorat and Sadana, 2009) using fourth Economic Census (2005) to deal with objectives like; inter-caste disparities in ownership of private enterprises, character of enterprise owned by different social groups and its linkages with poverty, found that even the ownership of private enterprise continued to be highly skewed along caste lines. Indeed, Chakravarty and Somanathan (2008) studied the placement outcomes at Indian Institute of Ahmedabad, which revealed no caste discrimination, may be possible because campus selection was done in an organized manner.

In addition, studies like Tilak (1980), Kingdon and Unni (2001) and Sengupta and Das (2014) investigated gender based discrimination in the Indian urban labor market. Sengupta and Das (2014) in his study using 50th and 66th round unit level data of Employment and Unemployment situations in India by National Sample Survey Office (NSSO) found gender wage gap has regional differences as at every educational level, it has been increasing in rural areas and on the other hand it has been decreasing in urban areas, moreover this gap remained very high for among illiterate workers. Women have been paid lower wages and this gender discrimination was more profound in socially backward classes like SC/STs and religious minorities like Muslims; and gender discrimination, superimposed caste and religious discrimination, meaning thereby, making it too difficult being at par with others for the women belonging to lower caste and religious minorities. Deininger et al. (2013) focus on wage discrimination in informal labor markets, an issue largely neglected in the Indian literature despite the fact that informal markets are the main destination for the poorest section of the population. Their results suggest that gender wage discrimination is larger in informal labor markets than in formal labor markets and more pronounced in agricultural sector.

Most empirical studies on wage discrimination in India have found SCs earn significantly lower wages than non SCs. Not only social groups, but females, rural workers also earn substantially lower wages. In the light of above studies reviewed so far, this study will try to focus on caste based discrimination in earnings and job opportunities and effect of increasing education and its return for different occupations, separately for different social groups with various econometric tools and techniques, described in the methodology of the study. This study is perhaps the first one which is using linear regression first, followed by logit regression and lastly various decomposition techniques to overcome the weaknesses related to earlier methods. This study improves the literature as it includes various important variables like regional differences and nature of job etc.

The rest of the paper is organized as follows. The next section discusses the dataset used in the paper, methodology adopted in the study and lays out the decomposition method in detail. Section 3 discusses the econometric analysis and results in detail. The last section offers concluding remarks.

2. DATA AND METHODOLOGY

The study uses nationally representative unit level secondary data from Indian Human Development Survey (IHDS) collected first in 2004-05 and again in 2011-12. The study is based on the individual data. The study confines itself to individuals aged between 15 and 65 years, either employed or seeking employment (unemployed). The lower bound of the age group ensures that the individual is not a child laborer. The survey has detailed demographic information (e.g., age, gender, marital status, household size, religion, social group, sector and place of residence) and socioeconomic position (e.g., land ownership, educational attainment, occupation and industry, type of job, wages and earnings) among several other characteristics.

2.1 Variables

In the analysis, we use the following variables:

Age: Age of an individual in years.

Education: Education of an individual is grouped in one of the following categories: (i) Illiterate or below primary (0-2 years), (ii) Primary (3-5), (iii) Middle (6-8), (iv) Secondary (9-10), (v) Higher secondary (11-12), and (vi) Graduate (above 12 years).

Marital status: Married and unmarried. Married group includes married, divorced and widowed.

Number of children: Number of children (0 – 14 years of age).

Social groups: forward caste (FCs), other backward classes (OBCs) Scheduled castes and scheduled tribes (together used as SCs in analysis).

Religion: Hindus and Non Hindus.

Sector of residence: Rural or urban.

Region: To capture regional variations, we group all the states of the country into four regions: Northern, Eastern, Southern, and Western.

Occupational characteristics: In the dataset, occupations are recorded using the National Classification of Occupations-1968 (NCO-68) scheme at the two-digit

level. We prefer to work with the broadest classification of occupations (at the one-digit level). We have seven occupational categories at the one-digit level: (i) Professional, technical and related workers (codes 0 and 1), (ii) Administrative, executive and managerial workers (2), (iii) Clerical and related workers (3), (iv) Sales workers (4), (v) Service workers (5), (vi) Farmers, fishermen, hunters, loggers and related workers (6), and (vii) Production and related workers, transport equipment operators and laborers (7, 8 and 9). In our analysis occupation codes 0, 1 and 2 are clubbed together to make it a single category as “Professional and Administration”. Accordingly, codes 3, 4 and 5 are clubbed as “Clerical/Sales and Services”, 6 as a separate category “Agriculture” and 7, 8, 9 as “Production”.

Earnings/wages: The earnings variable is hourly wage, obtained by dividing the total amount received during a year (or per day or month) by the number of days worked in a year and the number of hours an individual usually works in a day. The wage distribution is trimmed by 0.1 percent at both the ends of the distribution.

Type of job: Part time, full time and overtime.

The study uses different approaches to find out any evidences of caste discrimination in earning functions, occupation and returns to education for different social groups in different occupation. First, the study uses single equation models to predict earnings separately for different social groups e.g. Forward Castes (FCs), Other Backward Classes (OBCs) and Scheduled Caste/Scheduled Tribes (SC/STs) from the characteristics of all individuals. In this case, the results present marginal differences among caste groups, holding other control variables (characteristics) at their mean value, and thereby yields a biased result because it constraints the values of coefficients of explanatory variables, such as education, age (experience), gender and location etc. For convenience, ‘SC’ terminology has been used in tables to represent the both the SC and ST social groups.

Study does not consider students, retired and housework individuals. After that, the study uses logit regression analysis as the second approach, to disentangle the effect of different individual and household characteristics, one logit regression for each occupational category (labor market status) separately for each social group e.g. FCs, OBCs and SCs by estimating the following set of logit regression for working age individuals (aged between 15-65):

$$P(L_i=1)=\Phi(X_i\beta) \quad (1)$$

where L_i is a set of dummies measuring individual i occupational status, the vector X_i denotes individual and household characteristics, β is a vector of parameters to be estimated, and Φ is the standard normal cumulative distribution function. Most individual characteristics are defined as dichotomous variables like; gender, location and marital status and variables like; household size and number of children as household characteristics. Level of education is categorized into five dummies on the basis of years of education from 1-5, 6-11, 12-14, 15 & more and no education is taken as reference (omitted) category. These dummies are allowed to vary by social group through the interaction with caste variable.

The third approach parts the observed wage gap into two “endowment” and a “coefficient” component and called “decomposition techniques”. The “endowment” part is such that, it shows the component of wage differentials explained by individual ‘characteristics’ like education, age and others. And the later part is derived as an unexplained residual and shows the component of wage differentials explained by ‘discrimination’. This method was first developed by Blinder (1973) and Oaxaca (1973), which is called The Blinder Oaxaca decomposition method. The details on how this decomposition is done may be seen there in their research papers mentioned earlier and Jann (2008).

The Blinder-Oaxaca decomposition technique can be explained as follows:

We have two groups FC and SC, an outcome variable, Y (log wages) and a set of variables like; education, age etc. Now the difference of mean outcome is to be computed:

$$D=E(Y_{FC})-E(Y_{SC})$$

where $E(Y)$ denotes the expected value of outcome variable, is accounted for by the group differences in the regressors. The linear model is as follows:

$$Y_i=X_i'\beta_i+\epsilon_i, \text{ where } E(\epsilon_i)=0 \text{ and } i \in (FC, SC)$$

where X is a vector containing the predictors and a constant, β contains the slope parameters and the intercept, and ϵ_i is the error term, the mean outcome difference can be expressed as the difference in the linear prediction at the group-specific means of the regressors. That is,

$$D=E(Y_{FC})-E(Y_{SC})=E(X_{FC}')\beta_{FC}-E(X_{SC}')\beta_{SC} \quad (2)$$

Because

$$E(Y_i)=E(X_i'\beta_i+\epsilon_i)=E(X_i'\beta_i)+E(\epsilon_i)=E(X_i')\beta_i$$

Where $E(\beta_i) = \beta_i$ and $E(\epsilon_i) = 0$ by assumption

To identify the contribution of group differences in predictors to the overall outcome difference, (1) can be rearranged, for example, as follows:

$$D = \{E(X_{FC}) - E(X_{SC})\}' \beta_{SC} + E(X_{SC})' (\beta_{FC} - \beta_{SC}) + \{E(X_{FC}) - E(X_{SC})\}' (\beta_{FC} - \beta_{SC}) \quad (3)$$

Here what we get is called the 'threefold' decomposition, that is, the mean wage difference (D) is divided into three components:

$$R = E + C + I$$

The first component, $E = \{E(X_{FC}) - E(X_{SC})\}' \beta_{SC}$ amounts to the part of the differential that is due to group differences in the regressors (the "endowments effect"). The second component, $C = E(X_{SC})' (\beta_{FC} - \beta_{SC})$ measures the contribution of differences in the coefficients (including differences in the intercept, "discrimination" component). And the third component $I = \{E(X_{FC}) - E(X_{SC})\}' (\beta_{FC} - \beta_{SC})$ is an interaction term accounting for the fact that differences in endowments and coefficients exist simultaneously between the two groups.

The decomposition shown in (3) is formulated from the viewpoint of SC. That is, the group differences in the regressors are weighted by the coefficients of SC (β_{SC}) to determine the endowments effect (E) and similarly for the C component, the differences in coefficients are weighted by SCs predictor levels. Naturally, the differential can also be expressed from the viewpoint of FC, yielding the reverse 'threefold' decomposition,

$$D = \{E(X_{FC}) - E(X_{SC})\}' \beta_{FC} + E(X_{FC})' (\beta_{FC} - \beta_{SC}) + \{E(X_{FC}) - E(X_{SC})\}' (\beta_{FC} - \beta_{SC}) \quad (4)$$

Scholars used either of these two equations (equation 3 or 4) based on their assumptions about the existing market wage structure. It can be argued that, under discrimination, FCs are paid competitive wages but pay FCs more than the SCs. Coefficient should be used as the non-discriminatory wage structure. Therefore, the issue in literature is to how to determine the wage structure, would prevail in the absence of discrimination. This choice poses the well-known index number problem given that we would use either the FC or the SC wage structure as the non-discriminatory benchmark.

To over this problem and to extend the wage discrimination component further Cotton (1988), Neumark (1988) and Oaxaca and Ransom (1994) have proposed an alternative decomposition, prominent in the discrimination literature results from the concept that there is a nondiscriminatory coefficient vector that should be used to determine the contribution of the differences in the predictors. Let β^* be such a nondiscriminatory coefficient vector. The outcome difference can then be written as;

$$D = \{E(X_{FC}) - E(X_{SC})\}' \beta^* + E(X_{FC})' (\beta_{FC} - \beta^*) + E(X_{SC})' (\beta^* - \beta_{SC}) \quad (5)$$

where the first term on RHS of equation (5) is the part of the wage differential that is explained by group differences in the regressors (skill difference), the second term is overpayment to FCs due to favoritism and the third term is underpayment to SCs due to discrimination. The equation (6) is operationalized under the assumption of non-discriminatory wage structure by assigning proportions of FC (PFC) and SC (PSC) weights to the wage structure and β^* is defined as;

$$\beta^* = P_{FC} \beta_{FC} + P_{SC} \beta_{SC} \quad (6)$$

3. ECONOMETRIC ANALYSIS AND RESULTS

The linear regression modelling (single equation technique) uses logarithm of hourly wage rate as our regressand and age, level of education, gender, location, marital status, number of children, type of job, region and religion as our regressors to estimate the earning functions of FC, OBC and SC separately. The results of earning function are given in table 1 (Appendix II) below. The descriptive statistics of the variables used in the whole study is given in Appendix I.

The results clearly support the existing evidences of significant positive coefficients for education and marginal wage effects are increasing with the level of education for every social group. The studies like; Dutta (2004) and Madheswaran and Attewell (2007) using national level data supports these findings and our results are consistent with human capital theory which states that increasing education pays in higher wages.

Appendix I:

Descriptive statistics of main variables used in the analysis by caste

Variables	Description	FCs	OBCs	SCs
Hrwage	Hourly wages	39.17 (48.02)	25.61 (34.36)	23.45 (25.80)
Lnwage	Log of hourly wages	3.26 (0.86)	2.94 (0.72)	2.88 (0.67)
Age	Age in years	36.21 (14.19)	35.47 (14.23)	34.75 (14.00)
Illit	If respondent is illiterate=1; 0 otherwise	0.18 (0.38)	0.29 (0.45)	0.37 (0.48)

Variables	Description	FCs	OBCs	SCs
Prim	Completed primary school=1; 0 otherwise	0.11 (0.31)	0.13 (0.34)	0.14 (0.35)
Middle	Completed middle school=1; 0 otherwise	0.15 (0.36)	0.17 (0.37)	0.16 (0.37)
Secondary	Completed secondary school=1; 0 otherwise	0.24 (0.42)	0.21 (0.41)	0.18 (0.38)
H. Sec	Completed hr. secondary school=1; 0 otherwise	0.15 (0.36)	0.11 (0.31)	0.09 (0.29)
Grad	Completed graduation and above=1; 0 otherwise	0.18 (0.39)	0.09 (0.29)	0.06 (0.24)
Male	If respondent's sex is male=1; 0 otherwise	0.49 (0.50)	0.49 (0.50)	0.49 (0.50)
Married	If respondent is married=1; 0 otherwise	0.73 (0.44)	0.75 (0.44)	0.74 (0.44)
Urban	If respondent is working in urban=1; 0 otherwise	0.44 (0.50)	0.36 (0.48)	0.27 (0.44)
Nchild	Number of children	1.31 (1.48)	1.56 (1.63)	1.50 (1.47)
Overtime	If worker is doing overtime=1; 0 otherwise	0.11 (0.31)	0.09 (0.29)	0.07 (0.25)
North	If worker is from North India=1; 0 otherwise	0.42 (0.49)	0.30 (0.46)	0.33 (0.47)
South	If worker is from Southern India=1; 0 otherwise	0.10 (0.30)	0.30 (0.46)	0.19 (0.39)
West	If worker is from Western India=1; 0 otherwise	0.24 (0.43)	0.24 (0.43)	0.23 (0.42)
Hindu	If worker is Hindu=1; 0 otherwise	0.74 (0.44)	0.81 (0.39)	0.88 (0.33)
Prof./Admn	If worker is in professional/ administrative =1; 0 otherwise	0.78 (7.72)	0.44 (6.11)	0.47 (6.47)
Clerical/sales & services	If worker is in clerical/sales & services job=1; 0 otherwise	0.85 (7.71)	0.53 (6.11)	0.55 (6.47)
Agriculture	If worker is in agricultural job=1; 0 otherwise	0.76 (7.72)	0.69 (6.11)	0.79 (6.47)
Production	If worker is in production=1; 0 otherwise	1.04 (7.70)	0.86 (6.10)	0.89 (6.46)

Source: computed by the authors from IHDS I unit level data.

Note: ***p < 0.01, **p < 0.05, *p < 0.10 and standard errors are in the parentheses.

Appendix II: Descriptive tables used in the analysis

Table 1: OLS result of earning function (log of hourly wages)

Variables	FCs	OBCs	SCs
Age	0.038208***	0.0314731***	0.0216504***
Age2	-0.0003072***	-0.0003127***	-0.0001967***
Primary	0.1200828***	0.0846735***	0.1097135***
Middle	0.2141144***	0.1541338***	0.1714344***
Secondary	0.4052782***	0.236394***	0.2734666***
Higher Sec.	0.5946247***	0.3718872***	0.3701502***
Graduate & above	1.026862***	0.8253999***	0.8620564***
Male	0.432253***	0.4368164***	0.3679602***
Married	0.070337***	0.0612607***	0.0778325***
Number of children	-0.0231259***	-0.0162946***	-0.0142154***
Urban	0.2316187***	0.2401166***	0.2989328***
Over time	-0.4475452***	-0.355898***	-0.3438902***
North	0.0765234***	0.1236467***	0.0956527***
South	0.1211904***	0.2386483***	0.144918***
West	-0.0196171	-0.0685078***	-0.1760477***
Hindu	-0.0540574***	-0.0083272	-0.225803***
Constant	1.450403***	1.61075***	2.090436***
R-square	0.3547	0.3261	0.3271
F-value	347.55***	558.31***	507.37***
N	10755	20068	20221

Source: computed by the authors from IHDS II unit level data.

Note: N stands for sample size and ***p < 0.01, **p < 0.05, *p < 0.10

It is evident from table 1 that return to education as a whole varies among social groups and it is highest for FCs followed by SCs and lowest for OBCs at every level of education. Even the coefficient of experience (age) is lowest for SCs, that may be a matter to inquire into of any caste discrimination in that too. There are clear evidences of gender and location bias in earnings as marginal wage effects for both is significant and positive, favoring the males and urban individuals with same characteristics as their female and rural counterparts. Those who are work-

ing overtime are getting less hourly wages and may be a sign of sheer exploitation in the workplace.

To disentangle the effect of different individual characteristics, we estimate equations (1), one logit regression for each occupational category (labor market status). The marginal effect of each variable on the probability to hold a certain type of status (relative to other occupational category) is reported in table 2.

Table 2: Multivariate logit regression analysis

Dependent variable Robust		Professional & Administration	Clerical, Sales and Services	Agricultural	Production
Education (FC)	B. Prim	-	-	-	-
	Primary	1.059812***	0.2624154**	-0.4870119***	0.1233033***
	Middle	1.622274***	0.4639448***	-0.7100818***	0.0636495***
	Secondary	2.808591***	1.109617***	-1.070578***	-0.514570***
	Hr. Sec.	3.852222***	1.337085***	-1.487658***	-1.162438***
Education (OBC)	Graduate & above	5.100316***	0.9949963***	-2.909876***	-2.843489***
	B. Prim	-0.6264229**	-0.3350632***	0.1021889*	-0.056885***
	Primary	0.7619144***	0.0192489	-0.2723276***	0.0707446***
	Middle	1.157266***	0.2809683***	-0.5026483***	0.0650292***
	Secondary	2.331502***	0.8169325***	-0.7575627***	-0.174985***
Education (SC/ST)	Hr. Sec.	3.527494***	1.20961***	-1.046667***	-0.778916***
	Graduate & above	5.020635***	1.088237***	-2.206193***	-1.959839***
	B. Prim	-0.6823024***	-0.2941965***	0.3141117***	-0.259004***
	Primary	0.4160919	0.2455021**	-0.1212985*	-0.149950***
	Middle	1.156504***	0.3621261***	-0.4531493***	-0.018983***
	Secondary	2.250747***	0.8650967***	-0.5688609***	-0.315338***
	Hr. Sec.	3.42858***	1.094418***	-0.7618456***	-0.767975***
	Graduate & above	4.762866***	1.229983***	-1.586106***	-1.973791***
Age		0.0297262***	0.0181004***	-0.0021914*	-0.012698***
Male		-1.176453***	-0.1848461***	-0.6282862***	0.9265239***
Married		-0.0405794	-0.2196354***	-0.0007513	0.0352274***
Number of children		0.0035887	-0.0414168***	0.000623	0.0286321***
Urban		0.2104985***	1.359693***	-2.161488***	0.2908465***
Over time		-0.4438303***	0.5566268***	-0.5982371***	0.0252825***
North		-0.2031853***	0.1464608***	-0.5546535***	0.2424196***
South		-0.4472735***	-0.1972265***	1.088171***	-0.563889***
West		-0.7789355***	-0.0707337*	0.9844526***	-0.590084***
Constant		-4.910497***	-3.074282***	0.032066	0.0998124***
N		51076	51076	51076	51076
LR chi square (26)		10868.75***	6715.10***	16127.91***	7673.47***
Pseudo R ²		0.3721	0.1483	0.2573	0.1088

Source: computed by the authors from IHDS II unit level data.

Note: N stands for sample size and *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

We discuss the effect of education on occupational category outcomes separately for different social groups. Among forward castes, the higher the education, the higher the probability to be in a professional or administrative occupational category, and the lower the likelihood to engage in agricultural and production activities (mainly agriculture, non-agriculture wage laborers and construction workers) or lower paying jobs. More specifically, forward caste individuals with a degree (15 years or more education) are 5 times more likely to be in a professional or administration job than if they were illiterate.

Similarly, forward caste individuals with a degree (15 years or more education) are 290 per cent and 284 per cent less likely to be in agricultural and production activities respectively. As evident from the analysis more education leads to more mobility and that is one off the reasons, why more educated individuals leaving agriculture as their primary activity for livelihood. For OBCs and SCs too, more the education, lesser the probability to be in lower paying jobs like agriculture and production activities, which may be because of lower land holdings with Another reason for lower likelihood to be in these activities for them may be affirmative actions which provide better regular salaried jobs to those who have better educational attainments to an extent.

More education is definitely going to pay as better occupational opportunities and for OBCs or SCs too, higher the education, higher the probability to be in professional/Administrative or clerical/sales and services jobs. For OBCs and SCs the effect of increasing education is somewhat less than forward caste but very near to them and for clerical and sales & services jobs this is more than the forward castes for OBC and SCs, which shows the importance of educational reforms and policy initiatives for particularly weaker sections of the society.

3.1 Decomposition Analysis

Till now the study analyzed the single equation model and as we mentioned earlier this approach is biased one because it assumes that the slope coefficients are the same for all social groups. Then we employed separate logit regressions to analyze the effect of different characteristics like education, gender, region etc. for different labor market outcomes (occupations) separately for FCs, OBCs and SCs, which merely reflects the change in the probability of being in a occupation category given a unit change in an independent variable (here our main regressor was education). To overcome the limitations, the study next employed decomposition technique to our earning function and got the following results based on Blinder-Oaxaca approach in table 3.

Table 3: Blinder-Oaxaca decomposition results using SC mean wage

Components of decomposition (I)	SC vs FC (2005) (II)	SC vs FC (2012) (III)
Difference	0.6643706***	0.3786872***
Due to endowment (E)	0.5190806***	0.3244157***
Due to coefficient (C)	0.1027895***	0.0389775***
Due to interaction (I)	0.0425005***	0.0152939*
Endowment as per cent of total (E/R)	78.1	85.7
Discrimination as per cent of total (C/R)	15.5	10.3

Source: computed by the authors from IHDS I and II unit level data.

Note: Raw Differential (E+C+I) = (R), N stands for sample size and *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

It can be seen that the endowment component (characteristics) is larger than the coefficient (discrimination) component, which proves, the evidences are there for pre-market discrimination like educational attainment, health and other related facilities in Indian context. Nevertheless, only discrimination accounts for 15.5 per cent (in 2005) and 10.3 per cent (in 2012) of the lower wages of SC workers as compared to FCs. It can also be seen that the difference in wages has also reduced in the given time period of 2005 to 2012 and interaction part played a significant role in wage differentials of SCs against FCs.

It is noticeable here that the large endowment components show that individual characteristic like education and other endowment differences or pre-market discrimination or pure productivity differences explains a large part of wage differentials among social groups. However, discrimination component is very small but still it is significant and results into lower wages of SC individuals with same productivity levels as FCs individuals.

Table 4 above shows the relative contribution of each regressor to the observed wage differentials. The explained part of wage gap is attributed to endowment and unexplained part is due to discrimination in earning function.

Table 4: Relative contribution of variables to decomposition analysis (SC vs FC) 2011

Variables	Explained Difference	Unexplained Difference	Total Difference
Age	1.9***	73.3***	75.2
Primary	-1.1***	0.3	-0.8
Middle	0.04	1.9*	1.94
Secondary	4.2***	7.6***	11.8
Higher Sec.	5.8***	7.2***	13.0
Graduate & above	37.6***	9.6***	47.2
Male	12.6***	13.4***	26.0
Married	-1.0***	1.3	0.3
Number of children	0.9***	-2.7	-1.8
Urban	19.6***	-8.6***	11.0
Over time	-3.6***	-2.9***	-6.5
North	2.0***	-1.7	0.3
South	-4.0***	-0.7	-4.7
West	0.9***	9.9***	10.8
Hindu	9.9***	34.6***	44.5
Constant	-	-128.2***	-128.2
Total	85.7	14.3	100.0

Source: computed by the authors from IHDS I unit level data.

*Note: A negative number indicates advantage to SCs and vice versa and *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.*

The total difference column shows that the age variable (experience) was favorable to FCs in 2011 and it has large significant discrimination component. Our main regressor variable education was favorable to SCs only to primary level of education and after that it favored FCs. Males and urban individuals are in an advantageous position and this clearly brings out the situation of gender and regional differences in wages, which is again favoring FCs. Studies like Kingdon and Unni (2001) & Sengupta and Das (2014) supports our results, which showed clear evidences of wage differentials due to gender, caste and region bias. The coefficient for overtime suggests that here SCs are in favorable position because of more concentration in overtime activities and in southern India too SCs are in favorable position. Finally, study finds a large effect of the constant or intercepts term that works in favor of the SCs, which is more than offset by the age (experience) term.

Table 5: Various decomposition results (2011)

Components	Blinder-Oaxaca using SC means as weight	Blinder-Oaxaca using FC means as weight	Oaxaca-Ransom (pooled)	Cotton/Neumark
Explained (skill differences)	85.7*** (0.006667)	89.7*** (0.0090967)	86.5*** (0.0068133)	89.1*** (0.0066214)
Unexplained (discrimination)	14.3*** (0.0090423)	10.3*** (0.0105072)	13.5*** (0.0087625)	10.9*** (0.0070805)
Overpayment to FCs	-	-	-6.7*** (0.004616)	7.1*** (0.0046932)
Underpayment to SCs	-	-	20.2*** (0.0130977)	3.8*** (0.0025069)

Source: computed by the authors from IHDS I unit level data.

*Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$ and standard errors are in the parentheses.*

Table 5 shows different decomposition results using different approaches. It can be seen that according to Blinder-Oaxaca decomposition wage differentials due to discrimination component is 14.3 per cent, using SC means as weight and 10.3 per cent, using FC means as weight, somewhat overestimate the true value of the skill differentials. The Oaxaca-Ransom decomposition estimates the discrimination component at 13.5 per cent and this has been further decomposed, however, the largest component of the unexplained wage gap springs from the component (SC disadvantage) that measures the SC disadvantage due to labour market discrimination which is the equivalent to the ratio between the wage SCs should receive if the non-discriminatory wage structure were enforced and the wage they actually receive. This is essentially an indication of FC favoritism in the labor market.

The Neumark decomposition yields discrimination component at 10.9 per cent and indicates towards the magnitude of more favoritism to FCs (7.1 per cent) than disadvantage to SCs (3.8 per cent). As this decomposition has minimum standard errors, the estimates are perhaps most reliable among others.

Table 6: Cotton/Neumark decomposition results for caste wage gap (With Occupation)

Components	Part and overtime	Full time
Difference	0.2617712*** (0.0220814)	0.4134375*** (0.010545)
Explained (skill differences)	103.1*** (.0138604)	93.6*** (0.0077582)
Unexplained (discrimination)	-3.1 (0.017584)	6.4*** (0.0073054)
Overpayment to FCs	-	4.3*** (0.0050014)
Underpayment to SCs	-	2.1*** (0.002438)

Source: computed by the authors from IHDS I unit level data.

*Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$ and standard errors are in the parentheses.*

Table 6 clears that full time jobs have a significant positive discrimination component (6.4 per cent) for the wage differentials between SCs and FCs but part and overtime jobs have a negative unexplained component that shows in this type of job or activities SCs are in favorable position. This is justified as mostly the part time or overtime jobs are temporary in nature and need very little or no weightage of certain level of education and as SCs are mostly concentrated to these types of jobs they are in better position here as far as discrimination is concerned but still the raw wage differentials is in favor of FCs.

Table 7: Cotton/Neumark decomposition results for caste wage gap (With Occupation)

Components	2005		2011	
	Urban	Rural	Urban	Rural
Difference	0.546531*** (0.0195169)	0.3787462*** (.0135441)	0.2734146*** (0.0179509)	0.257664 (0.0106158)
Explained (skill differences)	94.9*** (0.014803)	74.1*** (.0102349)	118.6*** (0.0125792)	78.7 (0.0067743)
Unexplained (discrimination)	5.1** (0.0127225)	25.9*** (.0091557)	-18.6*** (0.0133803)	21.3 (0.008399)
Overpayment to FCs	2.4** (0.0061567)	20.1*** (.0071983)	-8.8*** (0.006366)	15.6 (0.0062477)
Underpayment to SCs	2.7** (0.0067174)	5.8*** (.0021039)	-9.8*** (0.007126)	5.7 (0.0022824)

Source: computed by the authors from IHDS I and II unit level data.

*Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$ and standard errors are in the parentheses.*

The various discrimination practices against SCs are being operated differently in rural spheres than in their urban counterparts and as one may hypothetically assume that the discrimination is more in rural areas than the urban spheres because of its typical socio-economic and political nature. For the purpose, the study estimated separate earnings function for the rural and urban areas and then decomposed the earning differentials between FCs and SCs. The results reported in table 7 reveals that SCs were discriminated against both in the rural and urban areas (in 2005), but the discrimination effect was much higher in the rural areas (25.9 per cent). Over the two periods, the discrimination component has been decreased significantly for rural areas (at 21.3 per cent) but for urban areas it has been dramatically changed to a negative unexplained component that leads to the findings that individual characteristics other than caste has played a significant part and no such discrimination in wage differentials is seen for urban areas with wage difference in favor of FCs.

Table 8 below provides detailed decomposition analysis of wage differentials by social group and as the study includes occupational variables in model; we get separate decomposition results for each occupational category. As can be seen in table 8 that discrimination coefficient is negative for professional/Administrative and clerical/Sales & services activities, which are comparatively high payment or secured jobs compared to other ones. Wage differentials for these activities are explained by 114.0 per cent and 118.4 per cent respectively by endowment component and SCs are in a favorable position due to negative discrimination component (-14.0 per cent and -18.4 per cent respectively). Still the wage differences are significant and in favor of FCs for these activities or occupations.

Table 8: Cotton/Neumark decomposition results for caste wage gap

Components	Professional & Administration	Clerical, Sales and Services	Agricultural	Production
Difference	0.258778*** (0.044757)	0.2474199*** (.0261166)	0.1838752** * (.0139229)	0.131201** * (.0113374)
Explained (skill differences)	114.0*** (0.0271617)	118.4*** (0.0164288)	40.2*** (0.0080576)	80.1*** (.0064492)
Unexplained (discrimination)	-14.0 (0.0346803)	-18.4** (0.0204442)	59.8*** (0.0116233)	19.9*** (.0088909)
Overpayment to FCs	-4.5 (0.0115593)	-9.0** (0.0101024)	49.1*** (0.0096988)	13.3*** (0.0060872)
Underpayment to SCs	-9.5 (0.023812)	-9.4** (0.0105195)	10.7*** (0.0021702)	6.6*** (0.003009)

Source: computed by the authors from IHDS I unit level data.

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$ and standard errors are in the parentheses.

As evident from the table 8 that discrimination component is highest at 59.8 per cent for agricultural activities, followed by production (19.9 per cent). High discrimination component in these activities is justified because there are no such affirmative action policies except constitutional safeguard of equal payment for same occupations, which can safeguard the rights of marginalized like; SCs, women and rural individuals and still, after all ethics and moralities, discrimination takes place in paying equal wages for same work. One of the reasons for high discrimination component in agricultural activities is because these activities are practiced dominantly in rural or semi urban areas, where, stagnation or conservatism of caste boundaries is prevalent and so as the wage differentials and this corresponds to the results of table 7 where the study got large discrimination components in wage differentials for SCs. As far as production activities are concerned these are dominant as laborer activities like construction works and here SCs can be found employed more frequently so as the discrimination is found positive.

4. CONCLUSION

To analyze caste based discrimination in earnings and job opportunities and effect of increasing education and its return for different occupations, the study estimated first, linear regression analysis, followed by logit regression and finally decomposition techniques. The earning function clearly support the existing evidences of significant positive coefficients for education and marginal wage effects are increasing with the level of education for every social group. But return to education for SCs and OBCs is very low compared to FCs, at every level of education. There are clear evidences of gender and location bias in earnings too. Our logit regression analysis improves our results by introducing findings of return to education for different employment statuses and it also clears that the occupational segregation is prevalent among different social groups.

Our decomposition results show that endowment component is much larger than the discrimination component, because of existence of pre-market discrimination like educational attainment, health and other related facilities in Indian context. Discrimination explains 10.9 per cent of the lower wages of SC individuals as compared to FCs in 2011. Lower levels of education were favorable to SCs like; upto upper primary level of education and after that it favored FCs. Higher levels of education like Secondary, higher secondary and higher education favored the FCs. Gender and regional differences in wages are prevalent, which is favoring FCs. Full time jobs have a significant positive discrimination component (6.4 per cent) for the wage differentials between SCs and FCs but part time and overtime jobs have a negative unexplained component that shows in this type of job or activities SCs are in favorable position. Over the two periods, the discrimination component has been decreased significantly for rural areas from 25.9 per cent in 2005 to 21.3 per cent in 2011 but for urban areas it has been dramatically changed to a negative unexplained component showing in urban areas no such evidences of discrimination in wage differentials was found.

After including job variable into the model, separate decomposition results were found for different occupational statuses and discrimination component was negative (-14.0 per cent and -18.4 per cent) for professional/administration and clerical/sales and services activities respectively. Wage differentials for these activi-

ties are explained by 114.0 per cent and 118.4 per cent respectively by endowment component and no such caste discrimination was found against SCs (due to negative discrimination component). But discrimination component is highest at 59.8 per cent for agricultural activities; followed by production (19.9 per cent).

Large endowment differences are a matter of concern for policy makers. Affirmative policies (reservation system) have contributed to a much extent in improving the level of education for marginalized, job opportunities in government (public sector) and in representations in legislature but special attention should be needed to mitigate the huge human capital gap between SCs and FCs. Lower return to education for SCs indicates the need for government policies focusing on education and employment opportunity both simultaneously like; skill development programmes on a much larger scale and free education for poor SC students with scholarships to pursue higher education. Gender and regional parity in earnings is of utmost importance, on one hand to empower women economically and on the other, to tackle the rural urban migration problem. Our occupational decomposition results indicates that a huge labor market in India is out of the ambit of affirmative action policies and here the government should initiate to reserve the right for equal earnings and opportunity for marginalized sections of the society like SCs, women and rural people.

ABBREVIATIONS

IHDS: Indian Human Development Survey; FC: Forward Castes; OBC: Other Backward Classes; OLS: Ordinary least squares; SC: Scheduled Castes; ST: Scheduled Tribes; NSSO: National Sample Survey Office; NCO: National Classification of Occupations

ACKNOWLEDGEMENTS

The views expressed in this paper are those of the authors and do not reflect the views of Department of Economics, University of Allahabad, the institution that the authors are affiliated to. We are grateful to participants of the 53rd annual conference of The Indian Econometric Society (TIES) held at National Institute of Science Education and Research (NISER), Bhubaneswar and to the related technical session's chairperson M P Bezbaruah (Professor of Economics, Gauhati University, India) for many insightful comments, which greatly improved the paper.

AVAILABILITY OF DATA AND MATERIALS

This paper is prepared by using unit level secondary data from Indian Human Development Survey (IHDS) collected in 2004-05 and 2011-12 at individual as well as household level. The IHDS data set and questionnaires are publicly available online.

REFERENCES

1. Abraham M.F. and Subramanian, R. (1974). Patterns of Social Mobility and Migration in a Caste Society. *International Review of Modern Sociology*, 4(1), p. 78-90.
2. Banerjee, B., and Knight, J.B. (1985). Caste Discrimination in the Indian Labor Market. *Journal of Development Economics*, 17(3), p. 277-307.
3. Bathran, R. (2016). The Many Omissions of a Concept: Discrimination amongst Scheduled Castes. *Economic & Political Weekly*, 51(47), p. 30-34.
4. Blinder, A. (1973). Wage Discrimination: Reduced Form and Structural Estimates. *Journal of Human Resources*, 8, p. 436-455.
5. Borooah, V.K., Dubey, A. and Iyer, S. (2007). The Effectiveness of Jobs Reservation: Caste, Religion and Economic Status in India. *Development Change*, 38(3), p. 423-445.
6. Chakravarty, S. and Somanathan, E. (2008). Discrimination in an Elite Labor Market? Job Placements at IIM-Ahmedabad. *Economic & Political Weekly*, 45.
7. Chandhoke, N. (2015). Repairing Complex Historical Injustice. *Economic and Political Weekly*, 39, p. 30-36.
8. Cheema, A. and Naseer, M.F. (2013). Historical Inequality and Intergenerational Educational Mobility: The Dynamics of Change in Rural Punjab. *The Lahore Journal of Economics*, 18(SE), p. 211-231.
9. Coffey, D., Gupta, A., Hathi, P., Spears, D., Srivastav, N. and Vyas, S. (2017). Understanding Open Defecation in Rural India: Untouchability, Pollution, and Latrine Pits. *Economic & Political Weekly*, LII (1), p. 59-66.
10. Deininger, K., Jin, S. and Nagarajan, H. (2013). Wage Discrimination in India's Informal Labor Markets: Exploring the Impact of Caste and Gender. *Review of Development Economics*, 17(1), p. 130-147.
11. Desai, S., Dubey, A., Joshi, B.L., Sen, M., Sharif, A. and Vanneman, R. (2010). *Human Development in India: Challenges for a Society in Transition*. New Delhi: Oxford University Press.
12. Dutta, P.V. (2004). *Structure of Wages in India*, University of Sussex. United Kingdom. PRUS Working Paper Number 25.
13. Eswaraiah, G. (1994). Study on the Social mobility of the Rural Scheduled Castes Population in Andhra Pradesh. *Man in India*, Serial Publications. p. 137-154.
14. Hnatkovska, V., Lahiri, A. and Paul, S.B. (2012). Caste and Labor Mobility. *American Economic Journal: Applied Economics*, 4(2), p. 274-307.
15. Jann, B. (2008). The Blinder-Oaxaca decomposition for linear regression models. *The Stata Journal*, 8(4), p. 453-479.
16. Jetley, S. (1969). Education and Occupational Mobility: A UP Village. *Economic and Political Weekly*, 4(17), p. 725-727.
17. Karade, J. (2009). *Occupational mobility among Scheduled Castes*, Cambridge Scholars Publishing. U.K. ISBN (10): 1-4438-0989-6, (13): 978-1-4438-0989-4.

18. Kingdon, G.G. and Unni, J. (2001). Education and Women's Labor Market Outcomes in India. *Education Economics*, 9, p. 173–195.
19. Kumar, S., Heath, A. and Heath, O. (2002). Determinants of Social Mobility in India. *Economic and Political Weekly*, 37(29), p. 2983–2987.
20. Lynch, O.M. (1969). *The Politics of Untouchability: Social Mobility and Social Change in a City of India*. Columbia University Press, New York, U.S.A.
21. Madheswaran, S. and Attewell, P. (2007). Caste Discrimination in the Indian Urban Labor Market: Evidences from the National Sample Survey. *Economic and Political Weekly*, 42(41), p. 4146–4153.
22. Mohan, C.U. (1984). Social Mobility Trends in an Andhra Village: A Study in Occupational Changes. *Indian Anthropologist*, 14(1), p. 1–12.
23. Nijhawan, N.K. (1971). Occupational Mobility and Political Development: Some Preliminary Findings. *Economic and Political Weekly*, 6(3/5), p. 317–324.
24. Oaxaca, R. (1973). Male–Female Wage Differentials in Urban Labor Markets. *International Economic Review*, 14, 693–709.
25. Prasad, A. (2015). A Study of Social Mobility in Ancient Indian Literature. *Indian Journal of Applied & Clinical Sociology*, 10 (3), p. 31–41, ISSN: 2230-9772 (Print); 2347-5927 (Online), Human Development & Welfare Institute.
26. Kumar, R., Kumar, S. and Mitra, A. (2009). Social and Economic Inequalities: Contemporary Significance of Caste in India. *Economic and Political Weekly*, 44(50), p. 55–62.
27. Ray, J. and Majumder, R. (2010). Educational and Occupational Mobility across generations in India: Social and Regional Dimensions, MPRA paper No. 28539. Posted 5 Feb. 2011. 14:59 UTC, online at <http://mpra.ub.uni-muenchen.de/28539/>.
28. Reddy, A.B. and Swaminathan, M. (2015). Intergenerational Occupational Mobility in Rural India: Evidence from Ten Villages. *Review of American Studies*. p. 95–134.
29. Sengupta, A. and Das, P. (2014). Gender Wage Discrimination across Social and Religious Groups in India: Estimates with Unit Level Data. *Economic and Political Weekly*, 49(21), p. 71–76.
30. Shah, G., Mander, H., Thorat, S., Deshpande, S. and Baviskar, A. (2006) *Untouchability in Rural India*. New Delhi. Sage Publication.
31. Siddique, Z. (2011). Evidence on Caste Based Discrimination. *Labor Economics*, 18, p. S146–S159.
32. Singh, D. (2009). Development of Scheduled Castes in India – A Review. *Journal of rural development*, 28(4), p. 529–542.
33. Spears, D. (2016). Caste and Life Satisfaction in Rural North India, *Economic and Political Weekly*, 41(4), p. 12–14.
34. Sunderaj, V. (1994). Predictors of social mobility: Profile of the innovative and non-innovative Scheduled Castes of rural Tamil Nadu, Dissertation Submitted to the Temple University Graduate Board.
35. Syal, R. (2012). What Are the Effects of Educational Mobility on Political Interest and Participation in the Indian Electorate?. *Asian Survey*, 52(2), p. 423–439.
36. Tamim, T. and Tariq, H. (2015). The intersection of caste, social exclusion and educational opportunity in rural Punjab. *International Journal of Educational Development*, 43, p. 51–62.
37. Thorat, S. and Sadana, N. (2009). Caste and Ownership of Private Enterprises. *Economic and Political Weekly*, 44(23), p. 13–16.
38. Thorat, S. and Attewell, P. (2007). The Legacy of Social Exclusion: A Correspondence Study of Job Discrimination in India. *Economic and Political Weekly*, 42(41), p. 4141–4145.
39. Tilak, J.B.G. (1980). Education and Labor Market Discrimination. *Indian Journal of Industrial Relations*, 16(1), p. 95–114.
40. Vaid, D. (2012). The Caste-Class Association in India: An Empirical Analysis. *Asian Survey*, 52(2), p. 395–422.
41. Wankhede, G.G. (2008). Accessing Higher Education: Affirmative Action and Structured Inequality – The Indian Experience. *Social Change*, 38(1), p. 31–51.

ENDNOTES:

1. Monopsonist exploitation is a situation when a firm is the only (or at least the main) buyer of workers from labor market. It enables firms to exploit workers by setting lower wages and employing fewer workers than in a competitive market.
2. The same estimates for the non-agriculture sector were insignificant.
3. See Desai et al. (2010) for the survey sampling and more information about the survey.
4. The 33 states (and Union Territories) are grouped as follows. The northern region includes nine states: Chandigarh, Delhi, Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Rajasthan, Uttar Pradesh and Uttarakhand. The eastern region consists of 12 states: Arunachal Pradesh, Assam, Bihar, Jharkhand, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Sikkim, Tripura and West Bengal. The southern region includes five states: Andhra Pradesh, Karnataka, Kerala, Puducherry and Tamil Nadu, and the western region covers seven states: Chhattisgarh, Dadra and Nagar Haveli, Daman and Diu, Goa, Gujarat, Madhya Pradesh and Maharashtra.
5. Individuals working 10 hours or more in a day are considered working overtime, from seven to nine hours as fulltime and less than seven hours as part time workers.
6. The approach allows only the intercept to vary by caste, but not the slope. In order to overcome this problem, we present earnings functions separately by caste